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10/598,029	08/16/2006	**Kentaro Ryuh**	70404.110/ok	9354

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EXAMINER	
MOON, SEOKYUN	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/598,029	RYUH ET AL.	
	Examiner	Art Unit	
	SEOKYUN MOON	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The Applicants' arguments with respect to the subject matter which is newly added to the independent claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1** and **3-10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **claim 1**, the claim discloses, "*both the first and second vertical scanning frequencies being lower frequencies when the first and second display sections are displaying still images and the first and second vertical scanning frequencies being higher frequencies when the first and second display sections are displaying moving images.*".

However, the claim does not disclose the criteria of classifying a frequency as the claimed lower frequency or the claimed higher frequency. Since the claim does not provide clear definitions of the claimed lower frequency and the claimed higher frequency, the claimed lower and higher frequencies render the claim indefinite.

For further examination purpose, the above claim limitation will be interpreted as, "... *both the first and second vertical scanning frequencies being first and second frequencies when the first and second display sections are displaying still images and the first and second vertical scanning frequencies being third and fourth frequencies when the first and second display sections are displaying moving images, wherein the first and second frequencies are lower than the third and fourth frequencies*."

Appropriate correction/explanation is required.

As to **claims 3-10**, the claims are rejected as being dependent upon the base claim rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1** and **3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi (JP Pub. No. 2001-117533) in view of Wakita (US 2002/0154077).

As to **claim 1**, Nobuyoshi teaches a display device [drawing 1] comprising a display panel ("*170*") [drawing 1] and driving circuitry ("*11*", "*12*", "*13*", "*14*", "*15*", "*16*", "*18*", and "*19*") for driving the display panel, wherein,

the display panel includes a first display section ("*170a*") and a second display section ("*170b*") [drawing 1];

the first display section ("*170a*") includes a plurality of first scanning lines (the plurality of horizontal lines arranged on the panel "*170a*") [drawing 1], a plurality of first signal lines (the plurality of vertical lines arranged on the panel "*170a*"), a plurality of first pixels each connected to one of the plurality of first scanning lines and one of the plurality of first signal lines [paragraph (0001)];

the second display section ("*170b*") includes a plurality of second scanning lines (the plurality of horizontal lines arranged on the panel "*170b*") [drawing 1], a plurality of second signal lines (the plurality of vertical lines arranged on the panel "*170b*"), a plurality of second pixels each connected to one of the plurality of second scanning lines and one of the plurality of second signal lines [paragraph (0001)]; and

the driving circuitry includes a first scanning line driving circuit ("*scanning driver 16a*") [drawing 1] for supplying a first scanning signal to the plurality of first scanning lines, a first signal line driving circuit (a combination of "*14a*" and "*15a*") for supplying a first data signal to the plurality of first signal lines, a second scanning line driving circuit ("*scanning driver 16b*") for supplying a second scanning signal to the plurality of second scanning lines, and a second signal line driving circuit (a combination of "*14b*" and "*15b*") for supplying a second data signal to the plurality of second signal lines, the driving circuitry being capable of driving the first display section ("*170a*") with a first vertical scanning frequency and driving the second driving section ("*170b*") with a second vertical scanning frequency which is different from the first vertical scanning frequency [paragraph (0030), emphasis on the last 6 lines].

Nobuyoshi does not expressly teach a plurality of switching elements each of which is connected to one of the plurality of first and second pixels.

However, Examiner takes Official Notice that it is well known in the art to include a plurality of switching elements in a liquid crystal display and to connect each of the plurality of switching elements to each of a plurality of pixels to control data transmission from a data driver to the plurality of pixels.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device taught by Nobuyoshi to include a plurality of switching elements and to connect each of the plurality of switching elements to each of the plurality of pixels, in order to reduce the power consumption of the display device (Note that an active matrix type liquid crystal display device consumes less power than a passive matrix type liquid crystal display device.).

Nobuyoshi does not expressly teach the first and second vertical scanning frequencies being first and second frequencies when the first and second display sections are displaying still images and the first and second vertical scanning frequencies being third and fourth frequencies when the first and second display sections are displaying moving images, wherein the first and second frequencies are lower than the third and fourth frequencies.

However, Wakita [claim 13] teaches the concept of driving a display section at a first frequency when the display section displays still images and at a second frequency when the display section displays moving images, wherein the first frequency is lower than the second frequency.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device of Nobuyoshi to drive the display sections at first and second frequencies when the display sections display still images and at third and fourth frequencies when the display sections display moving images, wherein the first and second frequencies are lower than the third and fourth frequencies, as taught by Wakita, in order to optimize the power consumption of the display device of Nobuyoshi.

As to **claim 3**, Nobuyoshi teaches that the display panel is a liquid crystal display panel [paragraph (0001)] having a pair of substrates and a liquid crystal layer provided between the pair of the substrates.

6. **Claims 4-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi and Wakita, and further in view of Baba (US 2002/0003522).

As to **claims 4** and **5**, Nobuyoshi teaches the display device of claim 3, wherein,

during one vertical scanning period, the first (a combination of "*14a*" and "*15a*") [drawing 1] and second signal line driving circuits (a combination of "*14b*" and "*15b*") [drawing 1] supply the first and second data signals to the plurality of first and second pixels, respectively [paragraph (0021)]; and

for a predetermined length of time within the length of time corresponding to one vertical scanning period, the plurality of first and second pixels are placed in a state of retaining the first and second data signals, respectively [paragraph (0001), pixels of a liquid crystal display retain image data signals in a frame period].

Nobuyoshi as modified by Wakita does not teach that the first and second signal line driving circuits supply first and second black display signals corresponding to display black to the plurality of first and second pixels with a different timing from the timing of supplying the first and second data signals during one vertical scanning period and the plurality of first and second pixels are placed in a state of retaining the first and second black signals for a predetermined second length of time within the length of time corresponding to one vertical scanning period.

However, Bada teaches a display device [fig. 7] comprising a signal line driving circuit ("*signal line driving circuit 25*") which supplies black data signal corresponding to display black [fig. 3] to a plurality of pixels with a different timing from the timing of supplying data signals during one vertical scanning period, wherein the plurality of pixels are placed in a state of retaining the black signals for a predetermined second length of time ("*black image display period*") [fig. 3] within the length of time corresponding to one vertical scanning period.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the first and second signal line driving circuits taught by Nobuyoshi as modified by Wakita to supply first and second black display signals corresponding to display black to the plurality of first and second pixels with a different timing from the timing of supplying the first and second data signals during one vertical scanning period, wherein the plurality of first and second pixels are placed in a state of retaining the first and second black signals for a predetermined second length of time within the length of

time corresponding to one vertical scanning period, as taught by Bada, in order to prevent blurring phenomenon of the display device.

7. **Claims 6-8** and **10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi and Wakita, and further in view of Kwon (US 6,360,149).

As to **claim 6**, Nobuyoshi as modified by Wakita does not teach the display device of claim 1 being a display device for an instrument panel mounted in an automotive vehicle.

However, Kwon teaches a concept of providing a display device ("*display screen* 36") [fig. 4] for an instrument panel ("*command module 20*") mounted in an automotive vehicle, wherein the display device displays at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle [col. 4 lines 54-60] and the display device includes a touch sensor selectively provided in the panel of the display device [col. 3 lines 12-14].

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the display device taught by Nobuyoshi as modified by Wakita for an instrument panel mounted in an automotive vehicle to display at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle and to modify the display device to include a touch sensor, as taught by Kwon, in order to provide an instrument panel for an automotive vehicle including an electronic display capable to display different videos from different video sources simultaneously.

As to **claim 7**, Nobuyoshi as modified by Wakita and Kwon teaches the display device of claim 6, wherein,

the first display section displays at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle [Kwon: col. 4 lines 54-60]; and

the first vertical scanning frequency is higher than the second vertical scanning frequency (Note that the display device taught by Nobuyoshi is configured to display images/videos having different vertical scanning frequencies on the display panel, simultaneously) [Nobuyoshi: paragraph (0030)].

As to **claim 8**, Nobuyoshi as modified by Wakita and Kwon teaches that the display panel includes a touch sensor selectively provided in one of the first display section and the second display section, as discussed with respect to the rejection of claim 6.

As to **claim 10**, Nobuyoshi as modified by Wakita and Kwon teaches that an automotive vehicle [Kwon: fig. 4] comprises an instrument panel ("*command module 20*") [Kwon: fig. 4] which includes the display device of claim 6.

8. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi and Wakita, and further in view of Morita (US 7,154,488).

Nobuyoshi teaches the display device comprising the driving circuitry, as discussed with respect to the rejection of claim 1.

Nobuyoshi as modified by Wakita does not expressly teach the driving circuitry being formed directly on a substrate of the display panel.

However, Morita teaches a concept of forming a driving circuitry of a display device directly on a substrate of a display panel of the display device [col. 3 lines 13-17].

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the driving circuitry taught by Nobuyoshi as modified by Wakita directly on the substrate of the display panel, as taught by Morita, in order to minimize the amount of space required to form the components needed to drive the display panel of Nobuyoshi.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 572-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 06, 2010
/S. M./
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629